Cell Analogy Project: Amusement Park
Three Layers to the Park - Generalized Cell

- Entry to the park - Plasma Membrane: Is made of a phospholipid bilayer which has the ability to open and close channels to allow things to enter and exit.

- Around the inside of the park - Cytoplasm: location of all organelles, people, inside the cell.

- Cytoplasm has 3 parts: - Cytosol: is the liquid. Organelles: Metabolic machinery. Inclusions: Melanin for hair and skin color.

- Headquarters of the park - Nucleus: holds DNA, the building map for protein. Needed for cell reproduction.
* Phospholipid Bilayer

- Has 2 fat (lipid) layers
- Hydrophilic: likes water, which is on the inside and outside of the membrane.
- Hydrophobic: hates water, which is on inside of the cell.
Trash Collector - Lysosomes

- Lysosomes get rid of bacteria in the cell.
- Lysosomes are also found in phagocytes.
Communication: Smooth ER

- The smooth endoplasmic reticulum communicates with the Rough ER and makes enzymes to digest fats, drugs, and pesticides.
The Rough ER is studded with ribosomes and has tiny channels that circulates through the cell to send out food (protein) to all part of the cell.

Ribosomes are made from protein and this energy is used in the cytoplasm.
Powerhouse - Mitochondria

- The mitochondria is a sausage shaped organelle.
- It reacts with oxygen to breakdown food then releases energy.
Traffic Director - Golgi Apparatus

- The Golgi Apparatus gets the protein from the Rough ER, changes the protein and repackages them for redistribution to the plasma membrane - the plasma membrane will release these packaged proteins and enzymes.
Storage - Chromatin

- Genetic material (DNA) found inside of the nucleus.
Security - Nuclear Membrane

- Phagocytosis: This is NOT a location but it is a process. They eat dirt, junk and bacteria that might harm the cells (found in the white blood cells).

- Lets thing in and out of the nucleus.